EPA Region 6
End-of-Year Review
For the
Oil Conservation Division (OCD) of the
New Mexico Energy, Minerals, and Natural Resources Department
Underground Injection Control (UIC) Program

State Fiscal Year 2003 (FY03)
July 1, 2002 through June 30, 2003

I. Introduction

The Oil Conservation Division of the New Mexico Energy, Minerals, and Natural Resources Department is the lead agency for the State's UIC program. The OCD has jurisdiction over Class I wells permitted to receive refinery wastes, all Class II wells, Class III brine solution mining wells, Class V geothermal wells and Class V wells at oilfield service companies. The New Mexico Environment Department (NMED) has jurisdiction over all other injection wells in the state.

This annual review considers all activities of the approved State UIC program administered by the OCD, including those identified in the grant work plan as well as other program activities, for the period July 1, 2002, through June 30, 2003. The total New Mexico UIC grant awarded in FY03 was $364,400; OCD received $252,310 based on the joint powers agreement between OCD and the New Mexico Environment Department. The OCD also received $26,700 funding for its special projects in FY03.

II. Work Plan Objectives and Activity Level

Testing

Major work plan field activities are required by regulations and/or guidance. Specific field activities for the three major classes of injection wells within the OCD UIC program are presented in Table 1.

Table 1- FY03 Mechanical Integrity Testing (7/1/01 to 6/30/03)

Activity	Well Class	Work Plan Target	Accomplished During FY03	Percent of Goal
Annulus Pressure Tests*	I	4	4	100
	II	1133	1004	88.6
	III	17	16	94.1

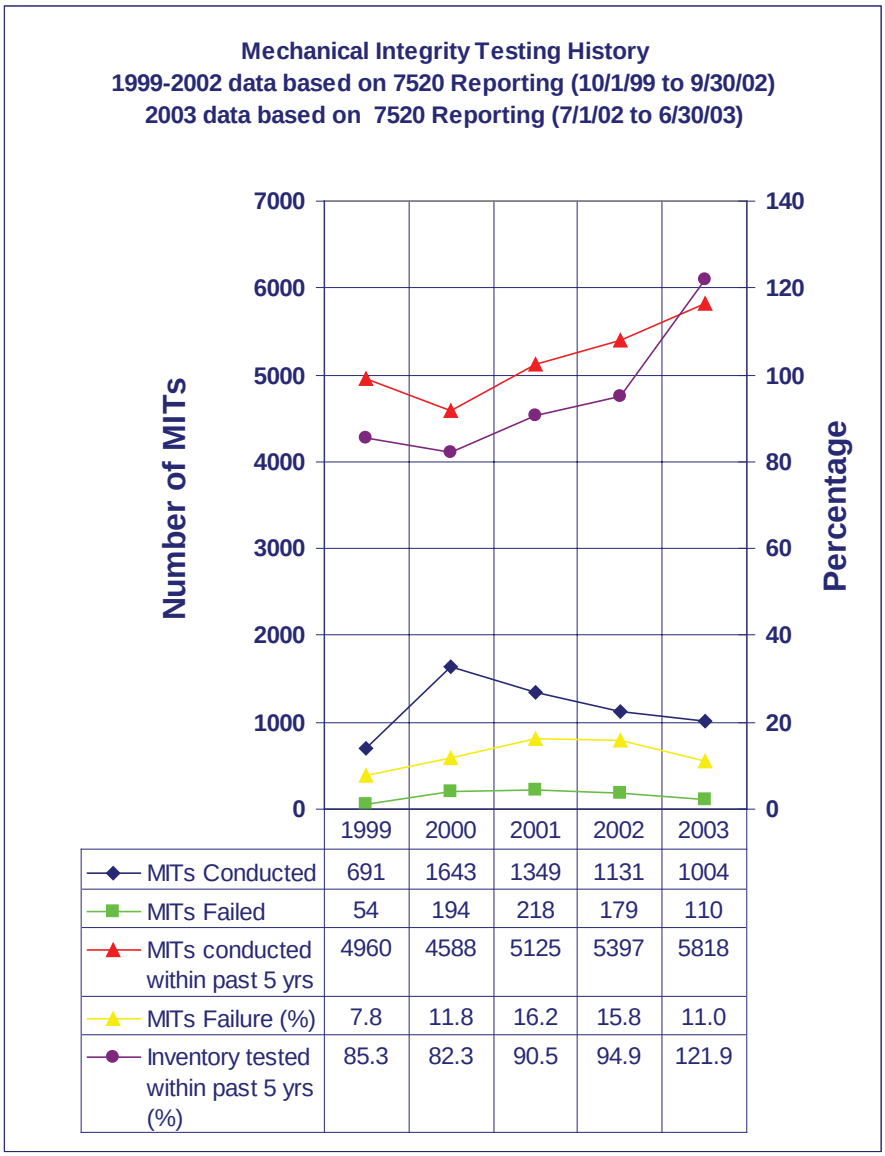
* Based on OCD submitted end-of-year report (July 1, 2002 to June 30, 2003)

1. Class III wells – The Environmental Bureau conducted 16 mechanical integrity tests on Class III wells. Of the 16 wells tested, only one well failed to demonstrate mechanical integrity. That well is now injecting with a monitoring program in place. The work plan target was not achieved because the 17th well was temporarily abandoned.

2. Class II wells - Together, the annulus pressure and bradenhead test program identified 338 wells without mechanical integrity, an overall failure rate of 4.9 percent. To address this

problem, the Bureau issued a notice of violation and followed up with a letter to the owners of these wells. In addition, OCD continues to monitor their progress until they are in compliance.

- Annulus pressure tests – The OCD FY03 work plan estimated that 1133 annulus pressure tests would be conducted for Class II wells. As shown in Table 1, the state reported 1004 tests in FY03. Figure 1 shows the annular pressure test failure rate was 11 percent or 110 of wells tested for this fiscal year. The OCD witness rate for annulus pressure testing was 65 percent.



	1999	2000	2001	2002	2003
MITs Conducted	691	1643	1349	1131	1004
MITs Failed	54	194	218	179	110
MITs conducted within past 5 yrs	4960	4588	5125	5397	5818
MITs Failure (%)	7.8	11.8	16.2	15.8	11.0
Inventory tested within past 5 yrs (%)	85.3	82.3	90.5	94.9	121.9

Figure 1: Five Year Mechanical Integrity Tests (annular pressure test) for Class II wells

The OCD continued to work to ensure that each UIC well in inventory is tested for mechanical integrity every five years. As shown in Figure 1, the cumulative percent of inventory with an annular pressure test within the last five years rose to 121.9 percent in FY03, up from 94.9 percent in FY02 and 90.5 percent in FY01. The cumulative percent exceeded 100% because the OCD continued to refine inventory numbers and inventory dropped significantly from last year.

- Bradenhead tests - The OCD FY03 work plan estimated that 5255 bradenhead tests would be conducted. The state reported 5911 bradenhead tests in FY03. The failure rate for these tests was 3.9 percent or 228 wells. The OCD witness rate for bradenhead testing was very good at 98 percent.

Inspections

The FY03 inspections exceeded the work plan commitment. The OCD FY03 work plan estimated that 6600 Class II wells would be inspected. The state reported 6702 inspections in FY03. The number of inspections exceeded inventory because multiple types of inspections were performed and counted for a single well.

Permitting

In its FY03 work plan, the OCD estimated that 60 new permit applications would be received, 140 Class II injection wells would be authorized, and 40 major permit modifications would be required. The actual numbers of permits received, issued, modified, and denied are shown in Table 2. These numbers depend on the level of injection activity in the state. No requests for a hearing concerning a UIC permit were received in FY03.

Table 2 - FY03 Permit Activities (7/1/02 to 6/30/03)

	Permits Issued in FY03			
Activity	**Salt Water Disposal**	**Enhanced Oil Recovery**	**Total Permits**	**Wells**
Permit Applications Received	51	17	68	124
Major Permit Modifications	16	14	30	-
Permits Denied	6	1	7	-

The OCD UIC program continues to perform area of review (AOR) analyses around wells for which permits are requested. Between 7/1/2002 and 6/30/2003, the OCD examined a

total of 865 wells during the area of review process. These reviews identified 19 wells that required corrective action prior to issuance of an injection permit.

As requested by EPA Region 6, the OCD investigated 76 of its Class II injection wells receiving permits with the condition that repairs be made on wells within the ½ mile area of review. A total of 62 AOR well bores were identified. To date, 11 of these 62 AOR wells have been repaired or a determination was made that no corrective action was required through further search of records. Moreover, the OCD discovered 5 of those 76 injection wells receiving permits with corrective action requirements were injecting prior to repairing the AOR wells. Subsequently, the OCD has written letters to the operators requiring them to cease injection immediately. The remaining wells in question have not begun injection and in fact, 25 of them have permits that have expired since the wells were not used for injection within one year of the date of permit issuance.

Figure 2 shows the number of wells permitted and the number of permits modified by OCD during the last five years.

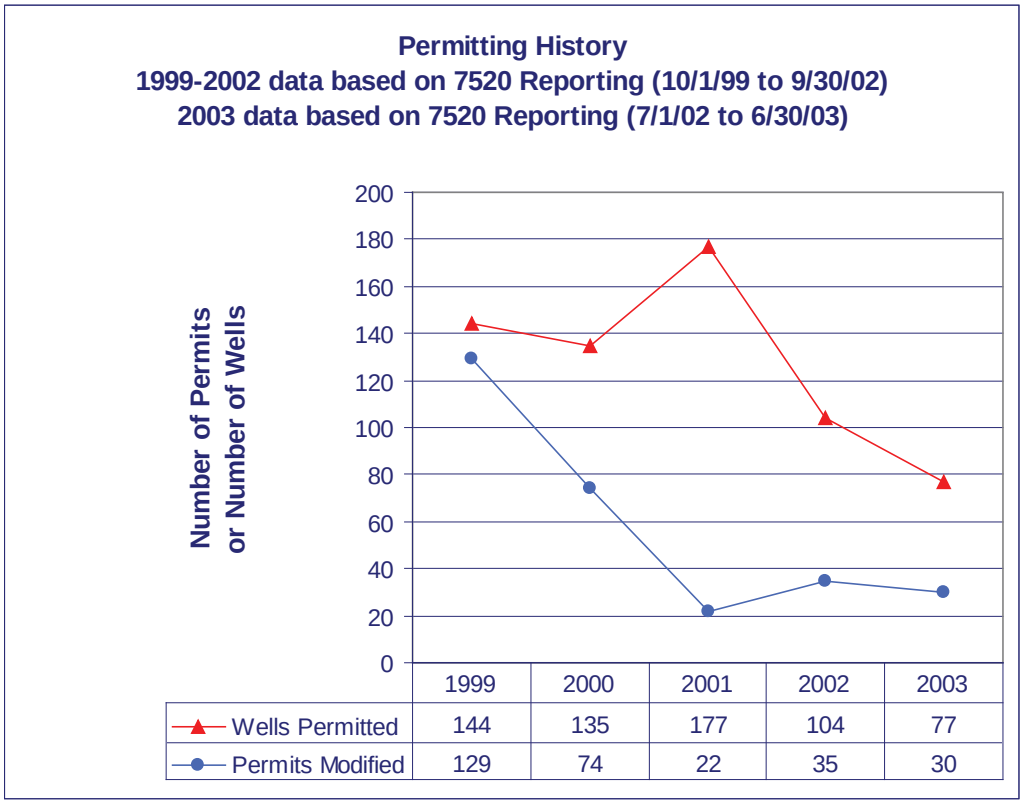


Figure 2: Five Year Permitting Activity for all well classes

Work Plan Deliverables

The State program updates and other deliverables provide Region 6 with oversight information as required by the grant work plan. Table 3 lists the deliverables submitted to Region 6 for FY03. The Quality Management Plan (QMP) and Quality Assurance Project Plan (QAPP) are updated annually by amendment, including new concurrence signature pages and current organizational charts. The QMP and QAPP are due respectively in December and September of each year. The OCD generally submitted all work plan deliverables in a timely manner as shown in Table 3.

Table 3 - FY03 Grant Work Plan Deliverables

Deliverables	**Due Date**	**Received**
FY 2002 Final Financial Status Report	09/30/02	09/26/02
Annual UIC Program Report (FY03)	07/30/03	08/25/03
UIC Annual Inventory (FY03)	01/30/03	01/14/03
7520 Reports	10/30/02, 01/30/03, 04/30/03, 07/30/03	10/30/02, 01/30/03, 04/30/03, 07/30/03
Update of QMP	09/15/02	09/06/02
Update of QAPP	12/7/02	04/01/02
Final FY 2003 Work Plan	06/30/03	05/19/03

Well Inventory

1. Class II wells - The inventory of Class II active and temporarily abandoned wells decreased significantly from December 2002 to June 2003 by more than 700 wells (see Figure 3). This decrease resulted from an on-going effort at OCD to verify the numbers reported on Form 7520 with their improved RBDMS database system. As of June 2003, the total inventory was 4771 which included 4191 active and 580 temporarily abandoned wells. In addition, there were 1520 plugged and abandoned wells.

2. Class I, III, and V wells – The OCD has jurisdiction over Class I wells injecting oilfield waste associated with refineries, Class III brine solution mining wells, Class V geothermal wells and Class V wells at oilfield service companies. The Environmental Bureau of the Oil Conservation Division administers this portion of the New Mexico UIC program. Table 4 reports the OCD Class I, III, and V inventory.

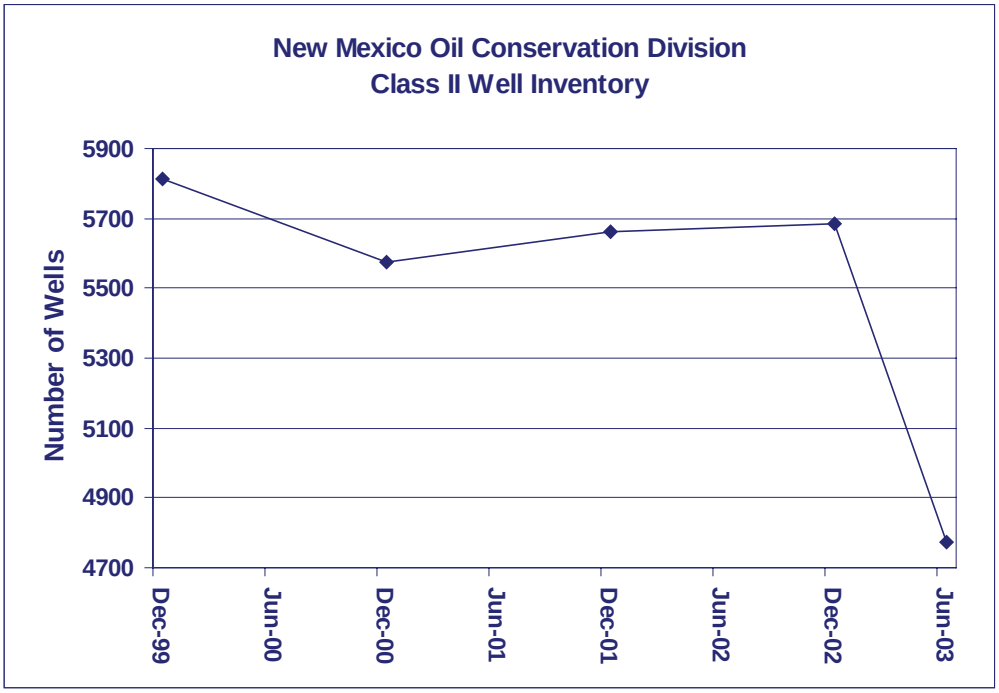


Figure 3: Class II active and temporarily abandoned injection well inventory

Table 4 - Class I, III, and V inventory

	Class I Non-hazardous			Class III			Class V		
Date Tabulated	AC[1]	TA[2]	PA[3]	AC	TA	PA	AC	TA	PA[4]
5/31/1998	2	0	2	20	3	8	0	0	26
6/30/1999	3	0	2	21	3	8	0	0	26
6/30/2000	4	0	2	21	3	8	0	1	27
6/30/2001	4	0	2	21	3	8	3	1	27
6/30/2002	4	0	2	17	7	8	3	1	27
6/30/2003	4	0	2	16	5	11	3	1	27

[1] - Active
[2] - Temporarily Abandoned
[3] - Plugged and Abandoned
[4] - It is the policy of the Environmental Bureau to close any Class V wells found at oil field service company facilities. Since the program started in 1997, cumulatively 27 wells have been closed by this program.

The OCD reported four Class V geothermal injection wells. Two of these, one active and one inactive, are located in a space heating project at New Mexico State University in Las Cruces. The remaining are in active use for heating greenhouses at Radium Springs, NM.

Enforcement

Table 5 summarizes the number of violations discovered by the OCD and reported on form 7520-2A. No violations were reported for Class I wells.

Table 5 - Summary of Violations (7/1/02 – 6/30/03)

Item	Salt Water Disposal	Enhanced Oil Recovery	Class III	Total
Unauthorized Injection	0	1	0	1
Mechanical Integrity	33	292	0	325
Operation & Maintenance	28	182	0	210
Plug and Abandon	5	38	0	43
Monitoring & Reporting	4	5	0	9
Total of Violations	70	518	0	588

Over the reporting period the OCD issued 174 notices of violation (NOV) and required 76 wells to be shut-in until compliance was obtained. In addition, in response to EPA's request, the OCD had surveyed its monthly production database and found that 840 injection wells had at least one incidence of not reporting to the department within 60 days of the due date. All of the operators involved were notified of this violation in FY03; however, this data was not entered into RBDMS and did not appear on the 7520 report because these incidences are monitored by people other than OCD field inspectors. EPA strongly recommends OCD to incorporate this violation data into the RBDMS system and report it on the 7520 forms.

On the other hand, the number of operation and maintenance violations has drastically reduced from 1092 in FY02 to 210 this fiscal year (see Figure 4). This results from an on-going effort at OCD to verify the numbers reported on Form 7520s with their improved RBDMS database system because the coding input by their inspectors may be incorrect or inconsistent in previous years.

At the time of this report only 21 wells with violations have not been returned to compliance. Efforts to obtain compliance for these wells are ongoing. Table 6 shows 724 wells with violations and 599 wells with an enforcement action; the difference is because some wells had multiple violations. Also, the number of wells with violations reported in Table 6 is higher than the total violations shown on Figure 4 because this total did not include two other types of violations, injection pressure/rate and other violations.

Table 6 - Summary of Enforcement Activities (7/1/02 – 6/30/03)

Item	Salt Water Disposal	Enhanced Oil Recovery	Class III	Total
Number of wells w/violations	105	619	0	724
Number of wells w/enforcement action	94	505	0	599
Notices of violation	15	159	0	174
Other Enforcement Actions (phone calls)	28	96	0	124
Wells shut-in	13	63	0	76
Number of wells returned to compliance	96	607	0	703

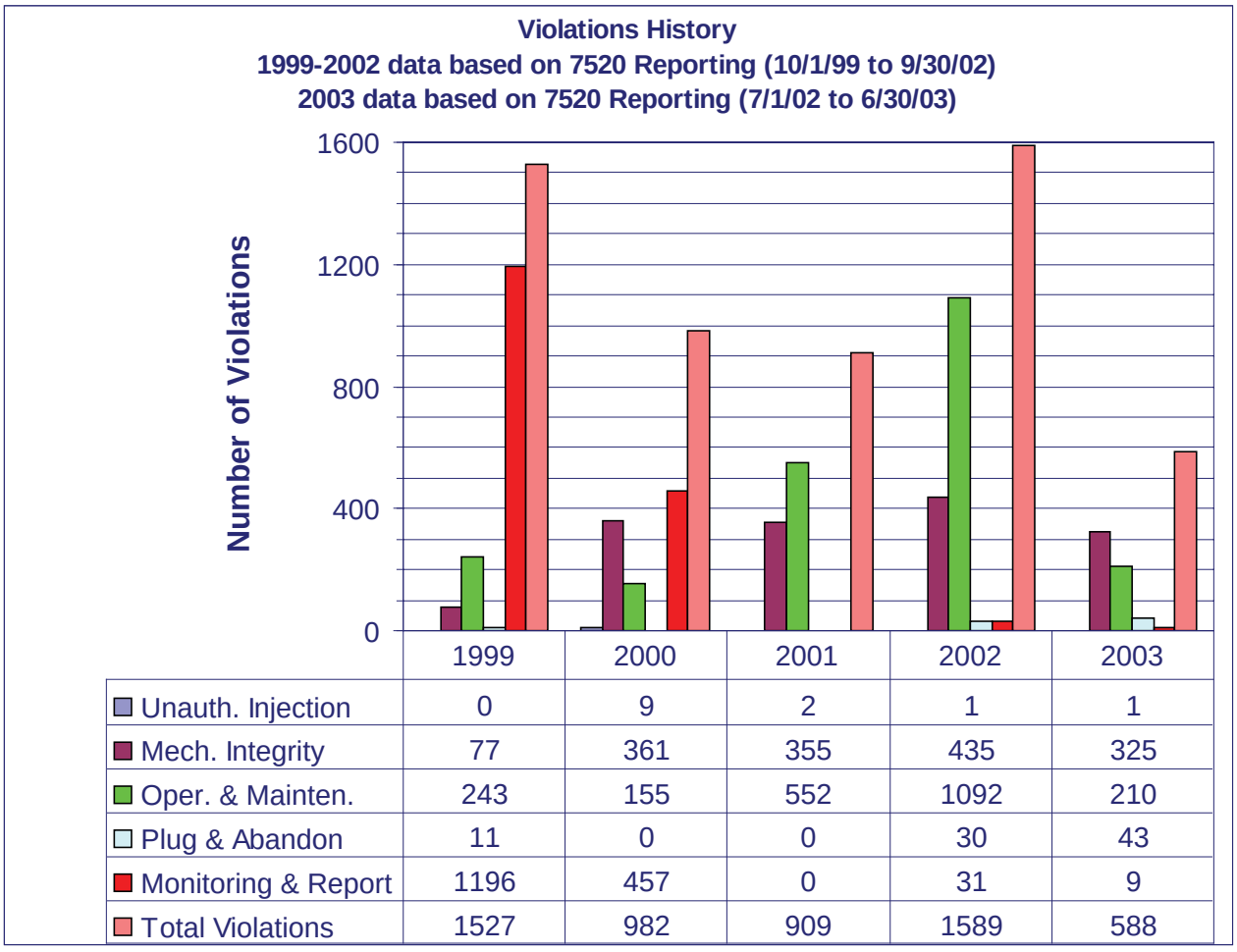


Figure 4: Violations History

Staffing

On July 1, 2003, Mr. William Jones was assigned to head the New Mexico UIC Program. Mr. Jones has a geological/civil engineering degree, and has 20 years of reservoir exploration experience with Texaco.

Current Initiatives

1. QMP and QAPP Manuals –The QMP manual was approved in mid-September 2003, and the QAPP manual in December 2003. For laboratory support, the OCD is currently operating under a price agreement instead of a standard contract. This form of contract allows it to use the services of more than one laboratory; as a result, it improves quality control and speed of processing.

2. Orphaned Wells Accountability – The effort to incorporate orphan wells into the state's ONGARD and RBDMS databases is almost complete. An orphan well does not have any responsible operator and would need to be plugged with money from the State's reclamation fund if it has no potential to produce. The list of potential orphan wells is distributed to OCD inspectors and other agencies to get their feedback on known contacts of responsible parties. The RBDMS will track the orphan well inventory and the status of each well as it proceeds toward plugging.

Special Projects

1. RBDMS Equipment Upgrades – Six Dell Latitude Notebook Computers were purchased in FY03 for a total of $18,000. With these new laptop computers, the OCD was able to replace one-third of its laptops due to be replaced. Newly hired environmental engineers, located within the Hobbs District Office, can now access the RBDMS system, similar to field inspectors, to perform UIC field duties.

   The RBDMS database system has became vitally important to the administration and functionality of the New Mexico UIC program. During FY03, the GIS/GPS module has, in particular, greatly aided office and field personnel in their UIC tasks. The OCD has continued to work to crosscheck and fill out data within the UIC tables. The Compliance Tracking Module is online within RBDMS and tracking violations and compliance incidents. The online manual has been maintained and expanded.

2. Equipment to support Class V Well Contamination Identification – Two Organic Vapor Monitors were purchased in FY03 for a total cost of $8,700. These monitors will greatly enhance the inspector's ability to discover contamination in/or around Class V wells, and will greatly reduce the number of samples needed to be collected and analyzed. In addition, OCD planned to utilize these instruments in remediation projects associated with Class II, III, and V well contamination sites.

3. New Mexico UIC Manual – This special project was awarded to OCD during FY02. The draft manual is still undergoing review by the OCD Director, Ms. Lori Wrotenberry. The manual is intended to detail all aspects of permitting and operating Class I, II, III, and V wells under OCD's jurisdiction. EPA has asked OCD to finish this as soon as possible and requested the opportunity to review the manual prior to formal publication.

4. Class V Well Training – This special project also was awarded to OCD last fiscal year. OCD reports that this training has been done in District offices in Hobbs, Artesia, and Aztec. In addition, a Class V brochure has been finalized and currently is undergoing review by the OCD Director, Ms. Lori Wrotenberry. This brochure will be disseminated to industry and the public.

Recommendations

1. Special Projects – EPA strongly recommends that OCD completes all special projects awarded in previous fiscal years within FY04, including the New Mexico UIC Manual and the Class V Well Training. This must be done prior to any additional special projects award.

2. Class I Fall-Off Tests – As discussed during our meeting on September 15 concerning annual fall-off testing for Class I non-hazardous wells, EPA requests that OCD initiates WQCC rule changes during FY04 to implement 40 CFR 146.13 (d)(1) which requires an owner or operator of a Class I non-hazardous well to conduct and analyze a fall-off test annually.

3. Reporting Violation Data – EPA also strongly recommends that OCD should include all violations that it had found as a result of its monthly production database survey into the RBDMS system and report them on the 7520 forms.